



## SEQUENCE LISTING

<110> ITOH, YASUAKI  
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TANAKA, HIDEYUKI  
OHKUBO, SHOICHI  
OGI, KAZUHIRO

<120> NOVEL POLYPEPTIDE

<130> 46342/56686

<140> 09/979,546

<141> 2001-11-20

<150> PCT/JP00/03221

<151> 2000-05-19

<150> JP 11-140229

<151> 1999-05-20

<160> 71

<170> PatentIn Ver. 2.1

<210> 1

<211> 125

<212> PRT

<213> Homo sapiens

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Met Ala Lys Tyr Leu Ala Gln Ile Ile Val Met Gly Val Gln Val Val  
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Ala Ala Ala Asp Ala Arg Gly Arg Ala Gly His Arg Ser Ala Ala Ala  
35 40 45

Ser Asn Leu Ser Gly Leu Ser Leu Gln Glu Ala Gln Gln Ile Leu Asn  
50 55 60

Val Ser Lys Leu Ser Pro Glu Glu Val Gln Lys Asn Tyr Glu His Leu  
65 70 75 80

Phe Lys Val Asn Asp Lys Ser Val Gly Gly Ser Phe Tyr Leu Gln Ser  
85 90 95

Lys Val Val Arg Ala Lys Glu Arg Leu Asp Glu Glu Leu Lys Ile Gln  
100 105 110

Ala Gln Glu Asp Arg Glu Lys Gly Gln Met Pro His Thr  
115 120 125

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Lys Gly Ile Ile Gly Leu Met Ser Arg Leu Ser Pro Asp Glu Ile Leu  
35 40 45  
Gly Leu Leu Ser Leu Gln Val Leu His Glu Glu Thr Ser Gly Cys Lys  
50 55 60  
Glu Glu Val Lys Pro Phe Ser Gly Thr Thr Pro Ser Arg Lys Pro Leu  
65 70 75 80  
Pro Lys Arg Lys Asn Thr Trp Asn Phe Leu Lys Cys Ala Tyr Met Val  
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Phe His Phe Gln Thr Gly Gly Arg Asp Ser Cys Thr Met Arg Pro Ser  
35 40 45  
Ser Leu Gly Gln Gly Ala Gly Glu Val Trp Leu Arg Val Asp Cys Arg  
50 55 60  
Asn Thr Asp Gln Thr Tyr Trp Cys Glu Tyr Arg Gly Gln Pro Ser Met  
65 70 75 80  
Cys Gln Ala Phe Ala Ala Asp Pro Lys Ser Tyr Trp Asn Gln Ala Leu  
85 90 95  
Gln Glu Leu Arg Arg Leu His His Ala Cys Gln Gly Ala Pro Val Leu

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Arg Pro Ser Val Cys Arg Glu Ala Gly Pro Gln Ala His Met Gln Gln		
115	120	125
Val Thr Ser Ser Leu Lys Gly Ser Pro Glu Pro Asn Gln Gln Pro Glu		
130	135	140
Ala Gly Thr Pro Ser Leu Ser Pro Lys Ala Thr Val Lys Leu Thr Gly		
145	150	155
Ala Thr Gln Leu Gly Lys Asp Ser Met Glu Glu Leu Gly Lys Ala Lys		
165	170	175
Pro Thr Thr Gly Pro Thr Ala Lys Pro Thr Gln Pro Gly Pro Arg Pro		
180	185	190
Gly Gly Asn Glu Glu Ala Lys Lys Lys Ala Trp Glu His Cys Trp Lys		
195	200	205
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210	215	220
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<213> Homo sapiens		
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20	25	30
Arg Leu Pro Ser Lys Cys Glu Val Cys Lys Leu Leu Ser Thr Glu Leu		
35	40	45
Gln Ala Glu Leu Ser Arg Thr Gly Arg Ser Arg Glu Val Leu Glu Leu		
50	55	60
Gly Gln Val Leu Asp Thr Gly Lys Arg Lys Arg His Val Pro Tyr Ser		
65	70	75
80		
Val Ser Glu Thr Arg Leu Glu Glu Ala Leu Glu Asn Leu Cys Glu Arg		
85	90	95
Ile Leu Asp Tyr Ser Val His Ala Glu Arg Lys Gly Ser Leu Arg Tyr		
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Ala Lys Gly Gln Ser Gln Thr Met Ala Thr Leu Lys Gly Leu Val Gln		
115	120	125
Lys Gly Val Lys Val Asp Leu Gly Ile Pro Leu Glu Leu Trp Asp Glu		
130	135	140

Pro Ser Val Glu Val Thr Tyr Leu Lys Lys Gln Cys Glu Thr Met Leu  
 145 150 155 160  
 Glu Glu Phe Glu Asp Ile Val Gly Asp Trp Tyr Phe His His Gln Glu  
 165 170 175  
 Gln Pro Leu Gln Asn Phe Leu Cys Glu Gly His Val Leu Pro Ala Ala  
 180 185 190  
 Glu Thr Ala Cys Leu Gln Glu Thr Trp Thr Gly Lys Glu Ile Thr Asp  
 195 200 205  
 Gly Glu Glu Lys Thr Glu Gly Glu Glu Gln Glu Glu Glu Glu Glu  
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 Glu Glu Glu Glu Gly Asp Lys Met Thr Lys Thr Gly Ser His  
 225 230 235 240  
 Pro Lys Leu Asp Arg Glu Asp Leu  
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 His Val Gly Asp Ser Ala Leu Met Gly Cys Val Phe Gln Ser Thr Glu  
 35 40 45  
 Asp Lys Cys Ile Phe Lys Ile Asp Trp Thr Leu Ser Pro Gly Glu His  
 50 55 60  
 Ala Lys Asp Glu Tyr Val Leu Tyr Tyr Ser Asn Leu Ser Val Pro  
 65 70 75 80  
 Ile Gly Arg Phe Gln Asn Arg Val His Leu Met Gly Asp Ile Leu Cys  
 85 90 95  
 Asn Asp Gly Ser Leu Leu Gln Asp Val Gln Glu Ala Asp Gln Gly  
 100 105 110  
 Thr Tyr Ile Cys Glu Ile Arg Leu Lys Gly Glu Ser Gln Val Phe Lys  
 115 120 125  
 Lys Ala Val Val Leu His Val Leu Pro Glu Glu Pro Lys Glu Leu Met  
 130 135 140  
 Val His Val Gly Gly Leu Ile Gln Met Gly Cys Val Phe Gln Ser Thr  
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Glu Val Lys His Val Thr Lys Val Glu Trp Ile Phe Ser  
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Ser Ser Asn Ser Thr Gly Val Leu Glu Ala Ala Asn Asn Ser Leu Val  
 20   25   30

Val Thr Thr Thr Lys Pro Ser Ile Thr Thr Pro Asn Thr Glu Ser Leu  
 35   40   45

Gln Lys Asn Val Val Thr Pro Thr Thr Gly Thr Thr Pro Lys Gly Thr  
 50   55   60

Ile Thr Asn Glu Leu Leu Lys Met Ser Leu Met Ser Thr Ala Thr Phe  
 65   70   75   80

Leu Thr Ser Lys Asp Glu Gly Leu Lys Ala Thr Thr Asp Val Arg  
 85   90   95

Lys Asn Asp Ser Ile Ile Ser Asn Val Thr Val Thr Ser Val Thr Leu  
 100   105   110

Pro Asn Ala Val Ser Thr Leu Gln Ser Ser Lys Pro Lys Thr Glu Thr  
 115   120   125

Gln Ser Ser Ile Lys Thr Thr Glu Ile Pro Gly Ser Val Leu Gln Pro  
 130   135   140

Asp Ala Ser Pro Ser Lys Thr Gly Thr Leu Thr Ser Ile Pro Val Thr  
 145   150   155   160

Ile Pro Glu Asn Thr Ser Gln Ser Gln Val Ile Gly Thr Glu Gly Gly  
 165   170   175

Lys Asn Ala Ser Thr Ser Ala Thr Ser Arg Ser Tyr Ser Ser Ile Ile  
 180   185   190

Leu Pro Val Val Ile Ala Leu Ile Val Ile Thr Leu Ser Val Phe Val  
 195   200   205

Leu Val Gly Leu Tyr Arg Met Cys Trp Lys Ala Asp Pro Gly Thr Pro  
 210   215   220

Glu Asn Gly Asn Asp Gln Pro Gln Ser Asp Lys Glu Ser Val Lys Leu  
 225   230   235   240

Leu Thr Val Lys Thr Ile Ser His Glu Ser Gly Glu His Ser Ala Gln

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250

255

Gly Lys Thr Lys Asn  
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<211> 243  
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<213> Homo sapiens

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1 5 10 15

Leu Leu Leu Leu Leu Leu Gln Leu Pro Ala Pro Ser Ser Ala Ser Glu  
20 25 30

Ile Pro Lys Gly Lys Gln Lys Ala Gln Leu Arg Gln Arg Glu Val Val  
35 40 45

Asp Leu Tyr Asn Gly Met Cys Leu Gln Gly Pro Ala Gly Val Pro Gly  
50 55 60

Arg Asp Gly Ser Pro Gly Ala Asn Gly Ile Pro Gly Thr Pro Gly Ile  
65 70 75 80

Pro Gly Arg Asp Gly Phe Lys Gly Glu Lys Gly Glu Cys Leu Arg Glu  
85 90 95

Ser Phe Glu Glu Ser Trp Thr Pro Asn Tyr Lys Gln Cys Ser Trp Ser  
100 105 110

Ser Leu Asn Tyr Gly Ile Asp Leu Gly Lys Ile Ala Glu Cys Thr Phe  
115 120 125

Thr Lys Met Arg Ser Asn Ser Ala Leu Arg Val Leu Phe Ser Gly Ser  
130 135 140

Leu Arg Leu Lys Cys Arg Asn Ala Cys Cys Gln Arg Trp Tyr Phe Thr  
145 150 155 160

Phe Asn Gly Ala Glu Cys Ser Gly Pro Leu Pro Ile Glu Ala Ile Ile  
165 170 175

Tyr Leu Asp Gln Gly Ser Pro Glu Met Asn Ser Thr Ile Asn Ile His  
180 185 190

Arg Thr Ser Ser Val Glu Gly Leu Cys Glu Gly Ile Gly Ala Gly Leu  
195 200 205

Val Asp Val Ala Ile Trp Val Gly Thr Cys Ser Asp Tyr Pro Lys Gly  
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Asp Ala Ser Thr Gly Trp Asn Ser Val Ser Arg Ile Ile Ile Glu Glu  
225 230 235 240

Leu Pro Lys

<210> 8

<211> 149

<212> PRT

<213> Homo sapiens

<400> 8

Met	Lys	Leu	Gln	Cys	Val	Ser	Leu	Trp	Leu	Leu	Gly	Thr	Ile	Leu	Ile
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														15	

Leu	Cys	Ser	Val	Asp	Asn	His	Gly	Leu	Arg	Arg	Cys	Leu	Ile	Ser	Thr
													20	25	30

Asp	Met	His	His	Ile	Glu	Glu	Ser	Phe	Gln	Glu	Ile	Lys	Arg	Ala	Ile
													35	40	45

Gln	Ala	Lys	Asp	Thr	Phe	Pro	Asn	Val	Thr	Ile	Leu	Ser	Thr	Leu	Glu
													50	55	60

Thr	Leu	Gln	Ile	Ile	Lys	Pro	Leu	Asp	Val	Cys	Cys	Val	Thr	Lys	Asn	
													65	70	75	80

Leu	Leu	Ala	Phe	Tyr	Val	Asp	Arg	Val	Phe	Lys	Asp	His	Gln	Glu	Pro
													85	90	95

Asn	Pro	Lys	Ile	Leu	Arg	Lys	Ile	Ile	Ser	Ile	Cys	Gln	Leu	Phe	Pro
													100	105	110

Leu	His	Ala	Glu	Asn	Ser	Ala	Ala	Met	Cys	Glu	Ser	Leu	Gly	Gln	Asn
													115	120	125

Ser	Ser	Ile	Cys	Ser	Leu	Ser	Ala	Gln	Gly	Glu	Ala	Arg	Lys	Cys	Trp
													130	135	140

Pro	Pro	Ser	Ala	Ser											
													145		

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<211> 136

<212> PRT

<213> Homo sapiens

<400> 9

Met	Ala	Ser	Leu	Gly	Leu	Leu	Leu	Leu	Leu	Leu	Thr	Ala	Leu	Pro	
1															
													15		

Pro	Leu	Trp	Ser	Ser	Ser	Leu	Pro	Gly	Leu	Asp	Thr	Ala	Glu	Ser	Lys
													20	25	30

Ala	Thr	Ile	Ala	Asp	Leu	Ile	Leu	Ser	Ala	Leu	Glu	Arg	Ala	Thr	Val
													35	40	45

Phe Leu Glu Gln Arg Leu Pro Glu Ile Asn Leu Asp Gly Met Val Gly

50

55

60

Val Arg Val Leu Glu Glu Gln Leu Lys Ser Val Arg Glu Lys Trp Ala  
 65                   70                   75                   80

Gln Glu Pro Leu Leu Gln Pro Leu Ser Leu Arg Val Gly Met Leu Gly  
 85                   90                   95

Glu Lys Leu Glu Ala Ala Ile Gln Arg Ser Leu His Tyr Leu Lys Leu  
 100                 105                 110

Ser Asp Pro Lys Tyr Leu Arg Gly Arg Thr Ala Ala Ser Pro Ala Ala  
 115                 120                 125

Ser Gln Thr Ser Ala Gly Ala Ser  
 130                 135

&lt;210&gt; 10

&lt;211&gt; 123

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 10

Met Lys Leu Leu Leu Ala Leu Pro Met Leu Val Leu Leu Pro Gln  
 1                 5                 10                 15

Val Ile Pro Ala Tyr Ser Gly Glu Lys Lys Cys Trp Asn Arg Ser Gly  
 20                 25                 30

His Cys Arg Lys Gln Cys Lys Asp Gly Glu Ala Val Lys Asp Thr Cys  
 35                 40                 45

Lys Asn Leu Arg Ala Cys Cys Ile Pro Ser Asn Glu Asp His Arg Arg  
 50                 55                 60

Val Pro Ala Thr Ser Pro Thr Pro Leu Ser Asp Ser Thr Pro Gly Ile  
 65                 70                 75                 80

Ile Asp Asp Ile Leu Thr Val Arg Phe Thr Thr Asp Tyr Phe Glu Val  
 85                 90                 95

Ser Ser Lys Lys Asp Met Val Glu Glu Ser Glu Ala Gly Arg Gly Thr  
 100                 105                 110

Glu Thr Ser Leu Pro Asn Val His His Ser Ser  
 115                 120

&lt;210&gt; 11

&lt;211&gt; 163

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 11

Met Gly Gly Leu Leu Leu Ala Ala Phe Leu Ala Leu Val Ser Val Pro  
 1                 5                 10                 15

Arg Ala Gln Ala Val Trp Leu Gly Arg Leu Asp Pro Glu Gln Leu Leu  
 20 25 30  
 Gly Pro Trp Tyr Val Leu Ala Val Ala Ser Arg Glu Lys Gly Phe Ala  
 35 40 45  
 Met Glu Lys Asp Met Lys Asn Val Val Gly Val Val Val Thr Leu Thr  
 50 55 60  
 Pro Glu Asn Asn Leu Arg Thr Leu Ser Ser Gln His Gly Leu Gly Gly  
 65 70 75 80  
 Cys Asp Gln Ser Val Met Asp Leu Ile Lys Arg Asn Ser Gly Trp Val  
 85 90 95  
 Phe Glu Asn Pro Ser Ile Gly Val Leu Glu Leu Trp Val Leu Ala Thr  
 100 105 110  
 Asn Phe Arg Asp Tyr Ala Ile Ile Phe Thr Gln Leu Glu Phe Gly Asp  
 115 120 125  
 Glu Pro Phe Asn Thr Val Glu Leu Tyr Ser Leu Thr Glu Thr Ala Ser  
 130 135 140  
 Gln Glu Ala Met Gly Leu Phe Thr Lys Trp Ser Arg Ser Leu Gly Phe  
 145 150 155 160  
 Leu Ser Gln

<210> 12  
 <211> 301  
 <212> PRT  
 <213> Homo sapiens

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 Gly Ala Trp Leu Lys Leu Gly Asn Gly Gln Ala Thr Ser Met Val Gln  
 20 25 30  
 Leu Gln Gly Gly Arg Phe Leu Met Gly Thr Asn Ser Pro Asp Ser Arg  
 35 40 45  
 Asp Gly Glu Gly Pro Val Arg Glu Ala Thr Val Lys Pro Phe Ala Ile  
 50 55 60  
 Asp Ile Phe Pro Val Thr Asn Lys Asp Phe Arg Asp Phe Val Arg Glu  
 65 70 75 80  
 Lys Lys Tyr Arg Thr Glu Ala Glu Met Phe Gly Trp Ser Phe Val Phe  
 85 90 95  
 Glu Asp Phe Val Ser Asp Glu Leu Arg Asn Lys Ala Thr Gln Pro Met

100

105

110

Lys Ser Val Leu Trp Trp Leu Pro Val Glu Lys Ala Phe Trp Arg Gln  
 115 120 125

Pro Ala Gly Pro Gly Ser Gly Ile Arg Glu Arg Leu Glu His Pro Val  
 130 135 140

Leu His Val Ser Trp Asn Asp Ala Arg Ala Tyr Cys Ala Trp Arg Gly  
 145 150 155 160

Lys Arg Leu Pro Thr Glu Glu Trp Glu Phe Ala Ala Arg Gly Gly  
 165 170 175

Leu Lys Gly Gln Val Tyr Pro Trp Gly Asn Trp Phe Gln Pro Asn Arg  
 180 185 190

Thr Asn Leu Trp Gln Gly Lys Phe Pro Lys Gly Asp Lys Ala Glu Asp  
 195 200 205

Gly Phe His Gly Val Ser Pro Val Asn Ala Phe Pro Ala Gln Asn Asn  
 210 215 220

Tyr Gly Leu Tyr Asp Leu Leu Gly Asn Val Trp Glu Trp Thr Ala Ser  
 225 230 235 240

Pro Tyr Gln Ala Ala Glu Gln Asp Met Arg Val Leu Arg Gly Ala Ser  
 245 250 255

Trp Ile Asp Thr Ala Asp Gly Ser Ala Asn His Arg Ala Arg Val Thr  
 260 265 270

Thr Arg Met Gly Asn Thr Pro Asp Ser Ala Ser Asp Asn Leu Gly Phe  
 275 280 285

Arg Cys Ala Ala Asp Ala Gly Arg Pro Pro Gly Glu Leu  
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<211> 69

<212> PRT

<213> Homo sapiens

<400> 13

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Ser Leu Phe Leu Ile Gln Leu Leu Ile Ser Phe Ser Glu Asn Gly Phe  
 20 25 30

Ile His Ser Pro Arg Asn Asn Gln Lys Pro Arg Asp Gly Asn Glu Glu  
 35 40 45

Glu Cys Ala Val Lys Lys Ser Cys Gln Leu Cys Thr Glu Asp Lys Lys  
 50 55 60

Tyr Met Met Asn Arg  
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<210> 14  
<211> 69  
<212> PRT  
<213> Homo sapiens

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Leu Ala Pro Ala Ala Arg Ala Gly Tyr Ser Glu Glu Arg Cys Ser Trp  
20 25 30

Arg Gly Arg Pro Arg Arg Thr Arg Thr Ser Ala Ala Ala Trp Pro Pro  
35 40 45

Ser Ala Leu Ser Cys Ala Arg Thr Gly Ala Pro Ser Cys Pro Arg Arg  
50 55 60

Pro Thr Val Ser Ala  
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<210> 15  
<211> 197  
<212> PRT  
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<400> 15  
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Leu Cys Gly Ser Ile Thr Leu Ala Leu Gly Asn Ala Gln Lys Leu Pro  
20 25 30

Lys Gly Lys Arg Pro Asn Leu Lys Val His Ile Asn Thr Thr Ser Asp  
35 40 45

Ser Ile Leu Leu Lys Phe Leu Arg Pro Ser Pro Asn Val Lys Leu Glu  
50 55 60

Gly Leu Leu Leu Gly Tyr Gly Ser Asn Val Ser Pro Asn Gln Tyr Phe  
65 70 75 80

Pro Leu Pro Ala Glu Gly Lys Phe Thr Glu Ala Ile Val Asp Ala Glu  
85 90 95

Pro Lys Tyr Leu Ile Val Val Arg Pro Ala Pro Pro Pro Ser Gln Lys  
100 105 110

Lys Ser Cys Ser Gly Lys Thr Arg Ser Arg Lys Pro Leu Gln Leu Val  
115 120 125

Val Gly Thr Leu Thr Pro Ser Ser Val Phe Leu Ser Trp Gly Phe Leu

130	135	140
Ile Asn Pro His His Asp Trp Thr Leu Pro Ser His Cys Pro Asn Asp		
145	150	155
Arg Phe Tyr Thr Ile Arg Tyr Arg Glu Lys Asp Lys Glu Lys Lys Trp		
165	170	175
Ile Phe Gln Ile Cys Pro Ala Thr Glu Thr Ile Val Glu Asn Leu Lys		
180	185	190
Pro Asn Thr Ser Leu		
195		

<210> 16  
<211> 378  
<212> DNA  
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gctggacacc ggtctgcagc cgcttccaa ctctccggcc tcagcctcca ggaggcacag 180  
cagattctca acgtgtccaa gctgagccct gaggagggtcc agaagaacta tgaacactta 240  
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cagatgcccc atacgtga 378

<210> 17  
<211> 366  
<212> DNA  
<213> Homo sapiens

<400> 17  
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ctgtaa 366

<210> 18  
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gattcctgca ctatgcgtcc cagcagcttg gggcaagggtg ctggagaagt ctggcttcgc 180  
gtcgactgccc gcaacacaga ccagacctac tgggtgtgagt acagggggca gcccagcatg 240  
tgccaggcctt tcgctgtgca ccccaaatct tactggaatc aagccctgca ggagctgagg 300  
cgccctcacc atgcgtgccq gggggccccg gtgcttaggc catccgtgtg cagggaggct 360

ggaccccagg cccatatgca gcaggtgact tccagcctca agggcagccc agagcccaac 420  
 cagcagcctg aggctggac gccatctctg agccccaaagg ccacagtcaa actcacagga 480  
 gcaacacagc tggaaagga ctcatggaa gagctggaa aagccaaacc caccaccgga 540  
 cccacagcca aacctaccca gcctggaccc aggcccggag ggaatgagga agcaaagaag 600  
 aaggcctggg aacattttt gaaacccttc caggccctgt gcgccttct catcagcttc 660  
 ttccgagggt ga 672

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 <212> DNA  
 <213> Homo sapiens

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 tgttaagctgc tgagcacaga gctacaggcg gaactgagtc gcacccggcg atctcgagag 180  
 gtgtggagc tggggcagggt gctggataca ggcaagagga agagacacgt gccttacagc 240  
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 agtgttcacg ctgagcgc aaaggcttgg agatatgcca agggtcagag tcagaccatg 360  
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 gaggagttt aagacattgt gggagactgg tacttccacc atcaggagca gcccctacaa 540  
 aattttctct gtgaagggtca tggctccca gctgctgaaa ctgcgtgtt acagggaaact 600  
 tggactggaa aggagatcac agatggggaa gagaaaacag aagggggagga agagoaggag 660  
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 cccaaactt accgagaaga tctttga 747

<210> 20  
 <211> 522  
 <212> DNA  
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 ggtatgtgtt tccagagcac agaagacaaa tgtatattca agatagactg gactctgtca 180  
 ccaggagagc acgccaagga cgaatatgtg ctatactatt actccaatct cagtgtgcct 240  
 attgggcgcct tccagaaccg cgtacacttg atggggaca tcttatgcaa tgatggctct 300  
 ctcctgctcc aagatgttca agaggcttgc cagggacact atatctgtca aatccgcctc 360  
 aaaggggaga gccaggtgtt caagaaggcg gtggactgtc atgtgcttcc agaggagccc 420  
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 gaagtgaaac acgtgaccaaa ggtagaatgg atattttcat ga 522

<210> 21  
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 <212> DNA  
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 acaggtgttt tagaggcagc taataattca cttgttgtta ctacaacaaa accatctata 120  
 acaacaccaa acacagaatc attacagaaa aatgttgcac caccaacaac tggaacaact 180  
 cctaaaggaa caatcaccaa tgaattactt aaaatgttcc tggatgtcaac agctactttt 240  
 ttaacaagta aagatgaagg attgaaagcc acaaccactg atgtcaggaa gaatgactcc 300

atcatttcaa acgtaacagt aacaagtgtt acacttcaa atgctgttc aacattacaa 360  
 agttccaaac ccaagactga aactcagagt tcaattaaaa caacagaaat accaggtagt 420  
 gttctacaac cagatgcac accttctaaa actggatcat taacctcaat accagttaca 480  
 attccagaaa acacctcaca gtctcaagta ataggcactg agggtgaaaa aaatgcaagc 540  
 acttcagcaa ccagccggtc ttattccagt attatttgc cggtggttat tgcttgatt 600  
 gtaataaacac tttcagttt tttctgggtt gggttgtacc gaatgtgctg gaaggcagat 660  
 ccgggcacac cagaaaatgg aaatgatcaa cctcagtcg ataaagagag cgtgaagctt 720  
 cttaccgtta agacaatttc tcatgagtct ggtgagcact ctgcacaagg aaaaaccaag 780  
 aactga 786

<210> 22  
 <211> 732  
 <212> DNA  
 <213> Homo sapiens

<400> 22  
 atgcgacccc agggccccgc cgccctccccg cagcggtcc gcggcctcct gctgctcctg 60  
 ctgctgcagc tgcccgcgcc gtcgagcgcc tctgagatcc ccaagggaa gcaaaaggcg 120  
 cagctccggc agagggaggt ggtggacctg tataatggaa tttgtcttaca agggccagca 180  
 ggagtgcctg gtcgagacgg gagccctggg gccaatggca ttccgggtac acctgggatc 240  
 ccaggtcggg atggattcaa aggagaaaag gggaatgtc tgagggaaag ctttgaggag 300  
 tcctggacac ccaactacaa gcagtgttca tggagttcat tgaattatgg catagatctt 360  
 gggaaaattt gggagtgtac attacaaaag atgcgttcaa atagtgtct aagagtttg 420  
 ttcagtggct cacttcggct aaaatgcaga aatgcatgct gtcagcggtt gtatttcaca 480  
 ttcaatggag ctgaatgttca aggaccttcc cccattgaag ctataatttta tttggaccaa 540  
 ggaagccctg aaatgaatttca aacaattaat attcatcgca cttcttctgt ggaaggactt 600  
 tgtgaaggaa ttgggtgtgg attagtggat gttgctatct ggggtggcac ttgttcagat 660  
 tacccaaaag gagatgttca tactggatgg aattcagttt ctcgcacatcat tattgaagaa 720  
 ctacccaaaat aa 732

<210> 23  
 <211> 450  
 <212> DNA  
 <213> Homo sapiens

<400> 23  
 atgaagttac agtgtgttcc cctttggctc ctgggtacaa tactgatatt gtgctcagta 60  
 gacaaccacg gtctcaggag atgtctgatt tccacagaca tgcaccatat agaagagagt 120  
 ttccaagaaa tcaaaagagc catccaagct aaggacacct tcccaaatgt cactatcctg 180  
 tccacattgg agactctgca gatcattaag cccttagatg tttgtctgcgt gaccaagaac 240  
 ctcctggcgt tctacgtgga cagggtgttc aaggatcatc aggagccaaa ccccaaaaatc 300  
 ttgagaaaaaa tcatcagcat ttgccaactc tttcctctac atgcagaaaaa ctctgcggca 360  
 atgtgtgagt cactgggtca gaattccagc atctgctccc tttgtctgccc aggagaggcc 420  
 aggaagtgtctt gggcccccattt ggcctcctga 450

<210> 24  
 <211> 411  
 <212> DNA  
 <213> Homo sapiens

<400> 24  
 atggccagcc tggggctgct gctcctgctc ttactgacag cactgccacc gctgtggtcc 60  
 tcctcactgc ctgggctgga cactgctgaa agtaaagcca ccattgcaga cctgatcctg 120  
 tctgcgtgg agagagccac cgtttccta gaacagaggc tgcctgaaat caacctggat 180

ggcatggtgg gggtccgagt gctggaagag cagctaaaaa gtgtccggga gaagtggcc 240  
 caggagcccc tgctgcagcc gctgagcctg cgctggggta tgctggggga gaagctggag 300  
 gctgccatcc agagatccct ccactacctc aagctgagtg atcccaagta cctaagagga 360  
 cggacagcag cgagccctgc ggccctctcag acctctgcag gagcctcatg a 411

<210> 25  
 <211> 372  
 <212> DNA  
 <213> Homo sapiens

<400> 25  
 atgaaaactcc tgctgctggc tcttcctatg cttgtgctcc taccccaagt gatcccagcc 60  
 tatagtggtg aaaaaaaaaatg ctggaacaga tcagggcact gcagggaaaca atgcaaagat 120  
 ggagaaggcag tgaaagatac atgcaaaaaat cttcgagctt gctgcattcc atccaatgaa 180  
 gaccacagggc gagttccctgc gacatctccc acacccttga gtgactcaac accaggaatt 240  
 attgatgata tttaaacagt aaggttcacg acagactact ttgaagtaag cagcaagaaaa 300  
 gatatggttg aagagtctga ggcgggaagg ggaactgaga cctctttcc aaatgttcac 360  
 catagctcat ga 372

<210> 26  
 <211> 492  
 <212> DNA  
 <213> Homo sapiens

<400> 26  
 atggccggcc tgctgctggc tgctttctg gctttggctt cggtgcccaag ggcccaggcc 60  
 gtgtggttgg gaagacttggc ccctgagcag cttcttggc cctggtagct gcttgcggtg 120  
 gcctcccccggg aaaagggttt tgccatggag aaggacatga agaacgtcg ggggggtgggt 180  
 gtgaccctca ctccagaaaaa caacctcgcc acgctgtctt ctcagcacgg gctgggaggg 240  
 tgtgaccaga gtgtcatggc cctgataaaag cgaaactccg gatgggtgtt tgagaatccc 300  
 tcaataggcg tgctggagct ctgggtgctg gccacccaact tcagagacta tgccatcatc 360  
 ttcactcagc tggagttcgg ggacgagccc ttcaacaccg tggagctgta cagtctgacg 420  
 gagacagcca gccaggaggc catggggctc ttcaccaagt ggagcaggag cctgggcttc 480  
 ctgtcacagt ag 492

<210> 27  
 <211> 906  
 <212> DNA  
 <213> Homo sapiens

<400> 27  
 atggccggc atgggttacc gctgctgccc ctgctgtcgc tcctggtcgg cgctggctc 60  
 aagcttagaa atggacaggc tactagcatg gtccaaactgc agggtggag attcctgatg 120  
 ggaacaaatt ctccagacag cagagatggt gaagggcctg tgctggaggc gacagtggaaa 180  
 cccttgcca tcgacatatt tcctgtcacc aacaaagatt tcagggattt tgctggagg 240  
 aaaaagtatc ggacagaagc tgagatgttt ggatggagct ttgtcttga ggactttgtc 300  
 tctgtatgagc tgagaaacaa agccacccag ccaatgaagt ctgtactctg gtggcttcca 360  
 gtggaaaagg cattttggag gcagcctgca ggtcctggct ctggcatccg agagagactg 420  
 gagcaccagg ttttacacgt gagctggaat gacgcccgtg cctactgtgc ttggcgggg 480  
 aaacgactgc ccacggagga agagtggag tttggccccc gagggggctt gaagggtcaa 540  
 gtttacccat gggggaaactg gttccagcca aaccgcacca acctgtggca gggaaagtcc 600  
 cccaaaggag acaaagctga ggatggctt catggagtct ccccaagtggaa tgctttcccc 660  
 gcccagaaca actacgggct ctatgacctc ctggggaaacg tggggagtg gacagcatca 720  
 ccgtaccaagg ctgctgagca ggacatgcgc gtcctccggg gggcatcctg gatcgacaca 780

gctgatggct ctgccaatca ccggggcccg gtcaccacca ggatggcaa cactccagat 840  
 tcagcctcag acaacctcgg tttccgctgt gctgcagacg caggccggcc gccaggggag 900  
 ctgtaa 906

<210> 28  
 <211> 210  
 <212> DNA  
 <213> Homo sapiens

<400> 28  
 atgtgctggc tgccccatg gggccagatc ctcctgccag tttccctctc cctcttctc 60  
 atccaattgc ttatcagctt ctcagagaat gtttttatcc acagccccag gaacaatcag 120  
 aaaccaagag atggaaatga agaggaatgt gctgtaaaga agagttgtca attgtgcaca 180  
 gaagataaga aatatatgtat gaatagataa 210

<210> 29  
 <211> 210  
 <212> DNA  
 <213> Homo sapiens

<400> 29  
 atggggttcc cggccgcggc gctgctctgc gcgctgtgct gcggcctcct ggccccggct 60  
 gccccgcggc gctaactccga ggagcgctgc agctggaggg gcaggccacg ccgcaccagg 120  
 acatcagccg cccgcgtggcc gccttccgct ttgagctgctg cgaggacggg cgccccggc 180  
 tgcccccgca ggcccacggt ctcggcgtag 210

<210> 30  
 <211> 594  
 <212> DNA  
 <213> Homo sapiens

<400> 30  
 atgcgaggtg gcaaattgca catgctctcc agtttgggt gtctacttct ctgtggaaat 60  
 attacactag ccctggaaa tgcacagaaa ttgcacaaaat gtaaaaggcc aaacctcaaa 120  
 gtccacatca ataccacaag tgactccatc ctcttgaagt tcttgcgtcc aagtccaaat 180  
 gtaaagcttg aaggcttctt cctggatat ggcagcaatg tatcaccaaa ccagtacttc 240  
 cctcttcccg ctgaaggaa attcacagaa gctataatgg atgcagagcc gaaatatctg 300  
 atagttgtgc gacctgctcc acctccaatg caaaagaatg catgttcagg taaaactcgt 360  
 tctcgcaaac ctctgcagat ggtgggttggc actctgacac cgagctcggt cttcctgtcc 420  
 tggggtttcc tcatcaaccc acaccatgac tggacattgc caagtcactg tcccaatgac 480  
 agattttata caattcgcta tcgagaaaag gataaaagaaa agaagtggat ttttcaaatc 540  
 tgtccagcca ctgaaacaat tgtggaaaac ctaaagccca acacaagttt atga 594

<210> 31  
 <211> 25  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Primer

<400> 31  
 atggccaaatg acctggccca gatca

<210> 32  
<211> 25  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Primer

<400> 32  
tcacgtatgg ggcatctgcc cttt 25

<210> 33  
<211> 25  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Primer

<400> 33  
atgcacagat cagagccatt tctga 25

<210> 34  
<211> 25  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Primer

<400> 34  
ttacagtagt ggcatgtaca cttgg 25

<210> 35  
<211> 25  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Primer

<400> 35  
atgaagttcg tccccctgcct cctgc 25

<210> 36  
<211> 25  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Primer

<400> 36  
tcaccctcg aagaagctga tgaga 25

<210> 37  
<211> 25  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Primer

<400> 37  
atgggacctg tgcgggtggg aatat 25

<210> 38  
<211> 25  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Primer

<400> 38  
tcaaagatct tctcggtcaa gtttg 25

<210> 39  
<211> 25  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Primer

<400> 39  
atgtttgcc cactgaaact catcc 25

<210> 40  
<211> 25  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Primer

<400> 40  
tcatgaaaat atccattcta ccttg 25

<210> 41  
<211> 25  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Primer

<400> 41  
atggaaactgc ttcaagtgac cattc 25

<210> 42  
<211> 25  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Primer

<400> 42  
tcagttcttg gttttccctt gtgca 25

<210> 43  
<211> 25  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Primer

<400> 43  
atgcgacccc agggccccgc cgccct 25

<210> 44  
<211> 25  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Primer

<400> 44  
ttatttttgtt agttcttcaa taatg 25

<210> 45  
<211> 25  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Primer

<400> 45  
atgaagttac agtgtgttcc ccttt 25

<210> 46

<211> 25  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Primer

<400> 46  
tcaggaggcc gatgggggcc agcac 25

<210> 47  
<211> 25  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Primer

<400> 47  
atggccagcc tggggctgct gctcc 25

<210> 48  
<211> 25  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Primer

<400> 48  
tcatgaggct cctgcagagg tctga 25

<210> 49  
<211> 25  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Primer

<400> 49  
atgaaaactcc tgctgctggc tcttc 25

<210> 50  
<211> 25  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Primer

<400> 50  
tcatgagcta tggtaaacat ttgga 25

<210> 51  
<211> 25  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Primer

<400> 51  
atgggcggcc tgctgctggc tgctt

25

<210> 52  
<211> 25  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Primer

<400> 52  
ctactgtgac aggaagccca ggctc

25

<210> 53  
<211> 25  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Primer

<400> 53  
atggcccgcc atgggttacc gctgc

25

<210> 54  
<211> 25  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Primer

<400> 54  
ttacagctcc cctggcggcc ggcct

25

<210> 55  
<211> 25  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Primer

<400> 55  
atgtgctggc tgcgggcatg gggcc 25

<210> 56  
<211> 25  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Primer

<400> 56  
ttatctatttc atcatatatatt tctta 25

<210> 57  
<211> 25  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Primer

<400> 57  
atggggttcc cggccgcggc gctgc 25

<210> 58  
<211> 25  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Primer

<400> 58  
ctacgccgag accgtgggcc tgcg 25

<210> 59  
<211> 25  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Primer

<400> 59  
atgcgagggtg gcaaatgcaa catgc 25

<210> 60  
<211> 25  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Primer  
  
<400> 60  
tcataaaactt gtgttggct ttagg 25  
  
<210> 61  
<211> 36  
<212> DNA  
<213> Artificial Sequence  
  
<220>  
<223> Description of Artificial Sequence: Primer  
  
<400> 61  
tcggaaattcg ccatggccaa gtacctggcc cagatc 36  
  
<210> 62  
<211> 60  
<212> DNA  
<213> Artificial Sequence  
  
<220>  
<223> Description of Artificial Sequence: Primer  
  
<400> 62  
acgctcgagt tacttgtcat cgtcgtcctt gtagtccgta tggggcatct gcccttttc 60  
  
<210> 63  
<211> 36  
<212> DNA  
<213> Artificial Sequence  
  
<220>  
<223> Description of Artificial Sequence: Primer  
  
<400> 63  
tcggaaattcg ccatggccag cctggggctg ctgctc 36  
  
<210> 64  
<211> 60  
<212> DNA  
<213> Artificial Sequence  
  
<220>  
<223> Description of Artificial Sequence: Primer  
  
<400> 64  
acgctcgagt tacttgtcat cgtcgtcctt gtagtctgag gtcctgcag aggtctgaga 60  
  
<210> 65

<211> 36  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Primer

<400> 65  
tcggattca ccatgaaact cctgctgctg gctctt

36

<210> 66  
<211> 60  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Primer

<400> 66  
acgctcgagt tacttgtcat cgtcgtcctt gtatgttagt ctatggtaa catttggaaag 60

<210> 67  
<211> 44  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Primer

<400> 67  
tagacgaatt cccaccatgg gacctgtcg gttggaaata ttgc

44

<210> 68  
<211> 57  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Primer

<400> 68  
aggcaagtgc acaagatctt ctcggtaag tttgggtgg cttcctgtct tggtcat

57

<210> 69  
<211> 51  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Primer

<400> 69  
gtgtagaatt cccaccatgg gcggcctgct gctggctgct tttctggctt t

51

<210> 70  
<211> 44  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Primer

<400> 70  
ctgggcgtcg acctgtgaca ggaagccag gtcctgctc cact

44

<210> 71  
<211> 8  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic FLAG  
tag

<400> 71  
Asp Tyr Lys Asp Asp Asp Asp Lys  
1 5